Reply and explanation of the differences to the Official Action summary

The main difference of present invention and prior arts of Owen et al. US 6028635 and Wee et al. US 6697061: This invention is in video "DeCompression" mainly for reducing the computing times of "VLD" + "Inverse DCT", while, the two prior arts of Owen et al. US 6028635 and Wee et al. US 6697061 both are in "Video Compression" and focusing on reducing times of accessing the reference memory frame buffer (US 6028635) and reducing the computing times of "Motion Estimation and/or DCT" (US 6697061) as listed in the table below.

	Sung et al. **Present invention**	Owen et al. US 6028635	**Wee et al.** **US 6697061**
Main features / Key points	Reducing computing times of **"VLD" + "Inverse DCT"** which is a set of block compression	Reducing time of saving frame to memory buffer by **"Re-compressing"** the decompressed pixels of reference frame buffer	Reducing computing times of "Motion Estimation" for "Video Editing" which related to video compression

"Claim 1" recites a method for **decoding a video stream:**

1). Decompressing the video stream (VLD + inverse DCT + DeQuantization) and

keeping the DCT bit stream into a temporary buffer for comparing to the new coming Block stream.

2). Incoming video stream equals to one of previously saved "Block" (DCT coefficient with VLC coded form) stream, then, the decompressed pixel values (differential values of a block pixels) will be used to represent the coming block. We directly compare the video stream block by block to previous stream to identify the block which equals to previous block which needs no decompression procedure including ("VLD", "inverse DCT" and "DeQuantization").

In contrast, the cited art of Owen et al. US 6028635. as cited in column 7, Lines 54 to Column 8 Line 6 Column 8 Line 59 to Column 9 Line 5 performs "DCT transform ...." Plus **"Re-compressing" the decompressed pixels** before storing the frame buffer memory and saves time of storing and accessing the referencing frame. Which does not relate to this invention of inverse DCT and VLD and saving the decompressed pixels to **an on-chip temporary buffer** for future block pixels comparison. This invention and Claim 1 does not teach "Re-Compressing" the decompressed pixels. And this claim does not teach "Re-compressing" for saving bandwidth of memory accessing. And in Wee 6,697,061 which indeed teaches motion estimation/compensation and DCT and inverse DCT (Column 4, Line 31-36 and Column 3, Line 47-55). But, the inverse DCT is for "Reconstructing" the compressed

image as "Referencing Frame" for future Compression used or to identify image which does not have any editing in previous frame which does not teach this invention of "decoding video stream" and does not teach VLD, dequantization and inverse DCT for decompressing a vide stream.

Applicant believes Claim 1 in the present invention needs to make clearer and needs to **add "On-chip temporary buffer for comparing"** to make more obvious difference to prior arts to avoid ambiguity.

Therefore, the Applicant respectfully submits you allow Claim 1, with the following updated Claim:

Claim 1: A method for decoding a video stream, comprising:

saving the coming block of compressed video to the first on-chip temporary storage device, applying the variable length decoding method to decode the video bit stream and block by block recovering the DCT coefficients and dequantizing the coefficient by multiplying the quantization table and inverse transforming the DCT coefficients to matrix of pixel values;

saving the decompressed block of pixels into the second on-chip temporary storage device;

looking up incoming compressed block of pixel data to the blocks of received pixel data saved in the first temporary storage device and identifying whether

any of the previous block is equivalent to the coming block; and

if a "Match" happens:

utilizing the block pixel data saved in the second temporary storage device corresponding to the matched block of bit stream to represent the block of decompressed bit stream,

otherwise, decompressing the block of bit stream according to the normal decompression procedure.

Therefore, the Applicant respectfully submits you allow Claim 1.

Claim 2: The present claim 2 teaches that only the block which does not find an equivalent block in previous blocks will go through the procedure of video decompression including VLD, dequantization, inverse DCT to reconstruct the block of pixels which is different from the quoted prior Owen et al. US 6028635, column 7, Lines 54-60 which teaches a typical procedure of block decompression no matter it find or not find an equivalent block of previous blocks. In Owen et al. US 6028635, column 8, Lines 22-25, Lines 39-41 and Line 59 to Column Line 5) recite the decompressing the block pixels and **"Re-compressing"** the block before saving the reference block of pixels into the frame buffer to save the time of saving to memory

which does not have any similarity to this claim.

Therefore, the Applicant respectfully submits you allow Claim 2, with the following updated Claim:

Claim 2: The method of claim 1, further comprising the steps of decoding the DCT bit stream and saving the decoded result **of block of pixels** into the second temporary storage device and saving the DCT coefficients into the first temporary storage device if the compressed block data fails to match any of the previous blocks.

Claim 3: The present claim 3 teaches that only the block which does not find an equivalent block in previous blocks will go through the procedure of video decompression including VLD, dequantization, inverse DCT to reconstruct the block of pixels which is different from the quoted prior Owen et al. US 6028635. column 8 Line 59 to Column 9 Line 5 recites the decompressing the block pixels and **"Re-compressing"** the block before saving the reference block of pixels into the frame buffer to save the time of saving to memory which does not have any relationship with this claim.

Therefore, the Applicant respectfully submits you allow Claim 2, with the following updated Claim:

Claim 3: The method of claim 2, further comprising the step of saving the